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REPUBLIC OF SOUTH AFRICA

Certificate
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)EPARTEMENT VAN HANDEL
:N NYWERHEID

DEPARTMENT OF TRADE AND
INDUSTRY

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PCT/IB/03/3687

the documents annexed hereto are true copies of:

Application forms P.1 and P.3, provisional specification and drawings of South African Patent Application No. **2002/7378** as originally filed in the Republic of South Africa on **13 September 2002** in the names of **HOAL, JOHN ANDREW VALENTINE** and **LAMBRICK, DAVID ROBERT** for an invention entitled: **"A LEAF TRAP".**

Geteken te PRETORIA in die Republiek van Suid-Afrika, hierdie **10th** dag van **October 2003**
Signed at in the Republic of South Africa, this day of

Registrateur van Patente

REPUBLIC OF SOUTH AFRI[illegible]
PATENTS ACT, 1978
APPLICATION FOR A PATENT AND
ACKNOWLEDGEMENT OF RECEIPT
(Section 30(1) Regulation 22)

REPUBLIC OF SOUTH AFRICA
REVENUE
13.9.02 R 060.00

FORM P.1
(to be lodged in duplicate)

THE GRANT OF A PATENT IS HEREBY REQUESTED BY THE UNDERMENTIONED APPLICANT ON THE BASIS OF THE PRESENT APPLICATION FILED IN DUPLICATE

REPUBLIK VAN SUID AFRIKA

A & A REF: V15392

PATENT APPLICATION NO.	
21	01 2002/7378
71	FULL NAME(S) OF APPLICANT(S)

(1) HOAL, John, Andrew, Valentine
(2) LAMBRICK, David, Robert

ADDRESS(ES) OF APPLICANT(S)

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54 TITLE OF INVENTION

A LEAF TRAP

ONLY THE ITEMS MARKED WITH AN "X" IN THE BLOCKS BELOW ARE APPLICABLE.

- [ ] THE APPLICATION CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANYING FORM P.2
  The earliest priority claimed is Country: No: Date:
- [ ] THE APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO. |21|01|
- [ ] THIS APPLICATION IS FRESH APPLICATION IN TERMS OF SECTION 37 AND BASED ON APPLICATION NO. |21|01|

THIS APPLICATION IS ACCOMPANIED BY:

- [X] A single copy of a provisional ~~or two copies of a complete~~ specification of 9 pages.
- [X] Drawings of 3 sheet(s).
- [ ] Publication particulars and abstract (Form P.8 in duplicate) (for complete only).
- [ ] A copy of Figure of the drawings (if any) for the abstract (for complete only).
- [ ] An assignment of invention.
- [ ] Certified priority document(s) (State quantity):
- [ ] Translation of the priority document(s).
- [ ] An assignment of priority rights.
- [ ] A copy of Form P.2 and the specification of RSA Patent Application No. |21|01|
- [X] A Form P.2 in duplicate.
- [X] A declaration and power of attorney on Form P.3.
- [ ] Request for ante-dating on Form P.4.
- [ ] Request for classification on Form P.9.
- [ ] Request for delay of acceptance on Form P.4.
- [ ]

74 ADDRESS FOR SERVICE: Adams & Adams, Pretoria

DATED THIS 12th DAY OF September 2002

P. PLA-PILLANS

ADAMS & ADAMS
APPLICANTS PATENT ATTORNEYS

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp.

RECEIVED
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TRADE MARKS ACT
2002 -09- 13
REGISTRATEUR VAN PATENTE, MODELLE, MERKE EN OUTEURSREG
REGISTRAR OF PATENTS

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PRETORIA

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978
DECLARATION AND POWER OF ATTORNEY
(Section 30 - Regulation 8, 22(i)(c) and 33)

FORM P.3

PATENT APPLICATION NO		A&A Ref: V15392 PP/tk	LODGING DATE	
21	01	2002/7378	22	13 SEPTEMBER 2002

FULL NAME(S) OF APPLICANT(S)	
71	HOAL, John Andrew Valentine LAMBRICK, David, Robert

FULL NAME(S) OF INVENTOR(S)	
72	HOAL, John Andrew Valentine LAMBRICK, David, Robert

EARLIEST PRIORITY CLAIMED	COUNTRY		NUMBER		DATE	
	33	NIL	31	NIL	32	NIL

NOTE: The country must be indicated by its International Abbreviation - see schedule 4 of the Regulations

TITLE OF INVENTION	
54	A LEAF TRAP

* I/We HOAL, John Andrew Valentine and LAMBRICK, David, Robert

hereby declare that :-

1. I/we am/are the applicant(s) mentioned above;

** 2. ~~I/we have been authorized by the applicant(s) to make this declaration and have knowledge of the facts herein stated in the capacity of _____ of the applicant(s);~~

*** 3. the inventor(s) of the abovementioned invention is/are the person(s) named above and the applicant(s) has/have acquired the right to apply by virtue of an assignment from the inventor(s);

4. to the best of my/our knowledge and belief, if a patent is granted on the application, there will be no lawful ground for the revocation of the patent;

**** 5. ~~this is a convention application and the earliest application from which priority is claimed as set out above is the first application in a convention country in respect of the invention claimed in any of the claims;~~ and

6. the partners and qualified staff of the firm of ADAMS & ADAMS, patent attorneys, are authorised, jointly and severally, with powers of substitution and revocation, to represent the applicant(s) in this application and to be the address for service of the applicant(s) while the application is pending and after a patent has been granted on the application.

SIGNED THIS 12TH DAY OF SEPTEMBER 2002

HOAL, John Andrew Valentine

LAMBRICK, David, Robert

* In the case of application in the name of a company, partnership or firm, give full names of signatory/signatories, delete paragraph 1, and enter capacity of each signatory in paragraph 2.
** If the applicant is a natural person, delete paragraph 2.
*** If the right to apply is not by virtue of an assignment from the inventor(s), delete "an assignment from the inventor(s)" and give details of acquisition of right.
**** For non-convention applications, delete paragraph 5.

A & A REF: [redacted]392

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FORM P.6

REPUBLIC OF SOUTH AFRICA
Patents Act, 1978

PROVISIONAL SPECIFICATION

(Section 30(1) - Regulation 27)

OFFICIAL APPLICATION NO.	*LODGING DATE*
21 01	*22* 13 September 2002

2002/7378

FULL NAME(S) OF APPLICANT(S)

71

(1) HOAL, John, Andrew, Valentine
(2) LAMBRICK, David, Robert

FULL NAME(S) OF INVENTOR(S)

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(1) HOAL, John, Andrew, Valentine
(2) LAMBRICK, David, Robert

TITLE OF INVENTION

54

A LEAF TRAP

THIS INVENTION relates to a leaf trap.

It relates particularly to a leaf trap for use with a swimming pool having a water recirculation system for circulating water from the pool through a filtration system and thereafter discharging the water back into the swimming pool.

Any reference hereinafter to a "leaf trap" must be interpreted to mean a trap for trapping leaves, organic plant material or any other material that collects in a swimming pool. Also, any reference to "leaves" must be interpreted to include a reference to any material or debris that collects in a swimming pool.

Further, any reference to a water recirculation system must be interpreted to mean a water recirculation system for a swimming pool, as described hereinabove.

Swimming pools typically have a weir that is connected to an inlet pipe which leads to the filtration system and an outlet pipe that leads from the filtration system to the pool for returning filtered water to the pool. A suction pool cleaner connected to the weir is typically used for sucking leaves up from the bottom of the pool.

It is known to locate a perforated basket in the weir to serve as a leaf trap. A problem associated with such leaf traps is that they require regular cleaning. A further problem is that as the leaf trap is filled with leaves, the suction pressure of the water recirculation system and as a consequence, of the pool cleaner, is affected.

It is an object of the present invention to ameliorate the abovementioned problems associated with existing leaf traps.

According to the invention there is provided a leaf trap for use with a swimming pool having a water recirculation system, the leaf trap comprising

a tank defining an internal space, the tank having a water inlet opening through which water from the swimming pool can enter the internal space, a water outlet opening through which water can be discharged from the tank and a leaf discharge opening through which leaves which collect in the tank, can be discharged from the tank;

filter means that is located in the internal space of the tank for separating leaves from water entering the tank through the water inlet opening, the filter means including a filter element that allows the passage of water but prevents leaves from passing therethrough, the filter element having a configuration which divides the tank into a first compartment that is in flow communication with said water inlet opening and said leaf discharge opening and wherein leaves entering the tank are trapped, in use; and a second compartment that is in flow communication with said water outlet opening; and

a drainage valve that is located in the leaf discharge opening for controlling opening/closing of the leaf discharge opening, the drainage valve including a movable valve member that is movable between an open and a closed condition and a valve seat on which the valve member is seated, one of the valve member and the valve seat defining a cutting formation for cutting through leaves that are located in the leaf discharge opening when the valve member closes, in use.

The leaf trap may be connected in line with the inlet pipe extending between the swimming pool and the pool filtration system, for trapping leaves entrained in water entering the leaf trap and allowing water from which the leaves have been separated, to be discharged from the leaf trap for filtering by the pool filtration system.

The tank may include a flushing water inlet opening through which water can be introduced into the tank for flushing leaves from the first compartment through

the leaf discharge opening. The flushing water inlet opening may be connected to a water mains supply for flushing leaves from the first compartment with water from the water mains supply. The leaf trap may include a flushing valve for controlling opening/closing of the flushing water inlet opening. It will be appreciated that the water inlet opening can be used for filling the tank with water for priming purposes.

The leaf trap may include control means for controlling the operation of the drainage valve and/or of the flushing valve.

Further features of the invention are described hereinafter by way of a non-limiting example of the invention, with reference to and as illustrated in the accompanying diagrammatic drawings. In the drawings:

Figure 1 shows a schematic block diagram of swimming pool having a water recirculation system and including a leaf trap in accordance with the invention;

Figure 2 shows a schematic side elevation of a leaf trap in accordance with the invention; and

Figure 3 shows a schematic top plan view of the leaf trap of Figure 2, with the top cover removed; and

Figure 4 shows a schematic perspective view, showing hidden detail, of a drainage valve of the leaf trap of Figure 2.

With reference to the drawings, a leaf trap in accordance with the invention, is designated generally by the reference numeral 10. The leaf trap is adapted for use with a swimming pool 12 having a water recirculation system for pumping water from the pool through a pool filter and thereafter discharging the water back into swimming pool 12.

The leaf trap 10 is connected in line with an inlet pipe 14 extending between the swimming pool 12 and the pool pump/pool filter.

The leaf trap comprises, broadly, a generally cylindrical tank 16 defining an internal space 18, filter means including a generally cylindrical filter element 20 that is centrally located within the internal space 18 of the tank 16, and a drainage valve 19.

The filter element 20 comprises a perforated casing wherein the holes in the casing allow the flow of water but prevent leaves from passing therethrough. The filter element 20 divides the internal space 18 of the tank 16, into a first compartment 22 which surrounds the filter element and which is defined between the tank 16 and the filter element and a second compartment 24 which is defined internally by the filter element 20.

The Applicant envisages that the tank will be used in an upright configuration as shown in Figure 2 of the drawings. The tank has an upper end 26 and a lower end 28. The tank 16 defines an inlet opening 30 through which water from the swimming pool containing leaves, can enter the first compartment 22 where the leaves are trapped, in use. The tank further defines an outlet opening 32 in the second compartment 24 through which water from which the leaves have been separated, can be discharged.

The filter means includes an outlet pipe 36 which is located in the outlet opening 32 of the tank and which extends into the second compartment 24 of the filter element where an end 34 of the pipe 36 terminates short of the base of the filter element.

The tank includes a removable top cover 38 having a flushing water inlet opening 40 through which water, e.g. from a water mains supply, can be introduced into the tank 16 for flushing leaves from the first compartment and for filling the tank with water for priming purposes. The tank may include a flushing valve (not shown) for controlling opening/closing of the inlet opening 40. The applicant envisages that the leaf trap will include control means for controlling the operation of the flushing valve.

The tank includes a leaf discharge opening 42 at its lower end through which leaves in the first compartment 22 can be discharged therefrom. As such, the drainage valve 19 controls opening/closing of the leaf discharge opening 42.

With reference to Figure 4 of the drawings, the drainage valve 19 is in the form of a sliding gate valve which is mounted to the tank at its lower end 28 opposite the leaf discharge opening 42. The valve 19 includes a valve housing 46 defining an inlet opening 48 that is located opposite the leaf discharge opening 42 and that is in flow communication therewith, a sliding gate valve member 50 that is displaceably mounted within the valve housing 46 so as to be displaceable between an open and a closed condition for opening/closing the leaf discharge opening 42, and a piston/cylinder mechanism that is designated generally by the reference numeral 52, for displacing the valve member 50 between its open and closed conditions. More particularly, the piston/cylinder mechanism 52 includes a cylinder 54, a piston 56 that is displaceable within the cylinder and that is connected to the valve member 50 via a connecting rod 58. The cylinder 54 defines two chambers 60.1 and 60.2 that are selectively pressurised by means of mains water for displacing the piston within the cylinder and thereby opening/closing the valve member 50.

The valve member 50 defines a cutting edge 51 for cutting through leaves that are located in the leaf discharge opening 42 when the valve member 50 closes, in use.

The Applicant envisages that the leaf trap will include electronic control means for controlling the operation of the piston/cylinder mechanism 52, the control means including solenoid-operated valves for controlling the flow of water to and

from the piston/cylinder mechanism and a timer for controlling the timing of opening/closing of the solenoid-operated valves.

It must be appreciated that although reference is made hereinabove to the use of the leaf trap with a swimming pool, the invention extends to the use of a leaf trap in accordance with the invention with any container for holding a liquid wherein liquid from the container is pumped through the leaf trap for filtering leaves therefrom.

DATED THIS12TH DAY OF SEPTEMBER 2002

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APPLICANT'S PATENT ATTORNEYS

HOAL, John Andrew Valentine
LAMBRICK, David Robert

B 2002/7378
3 SHEETS
SHEET NO. 1

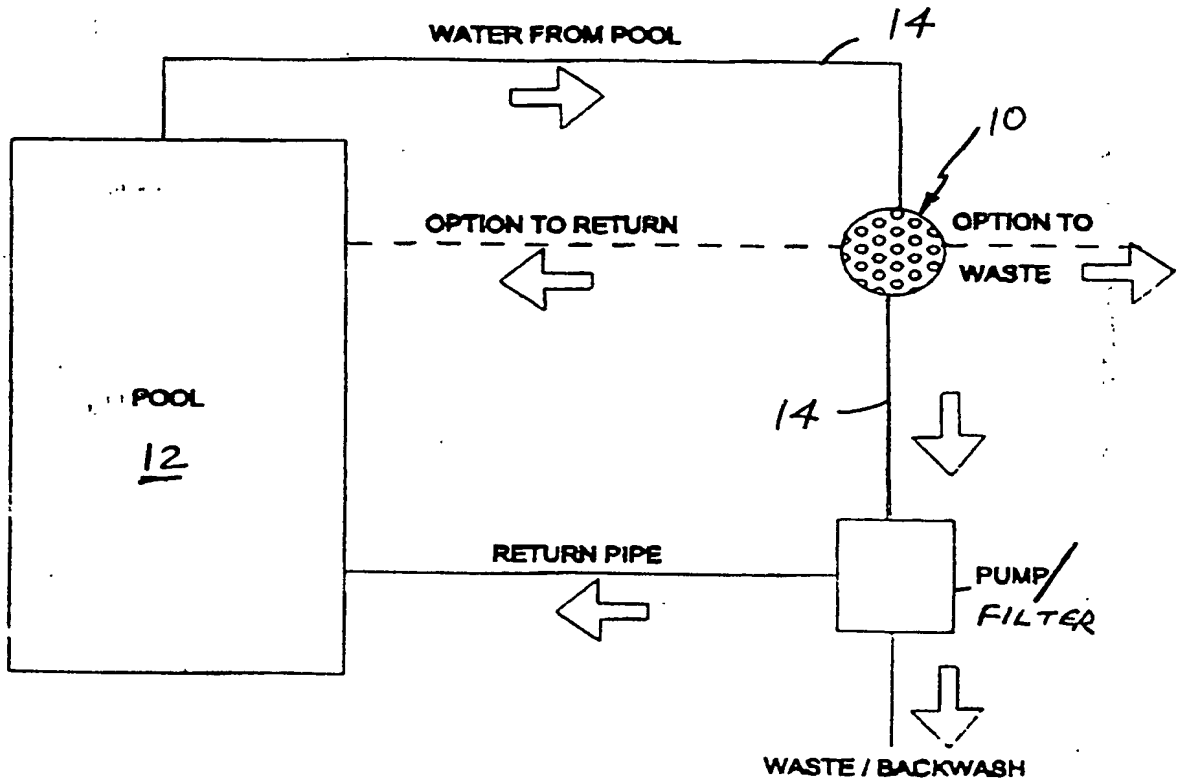

FIG. 1.

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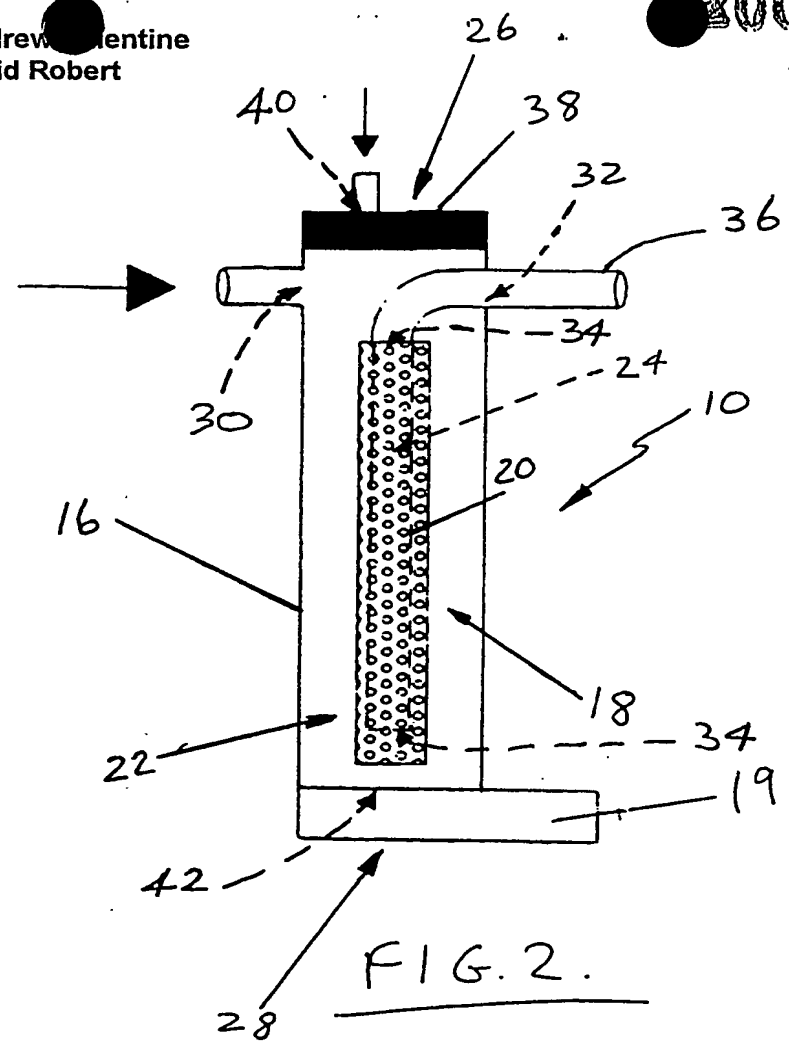

FIG. 2.

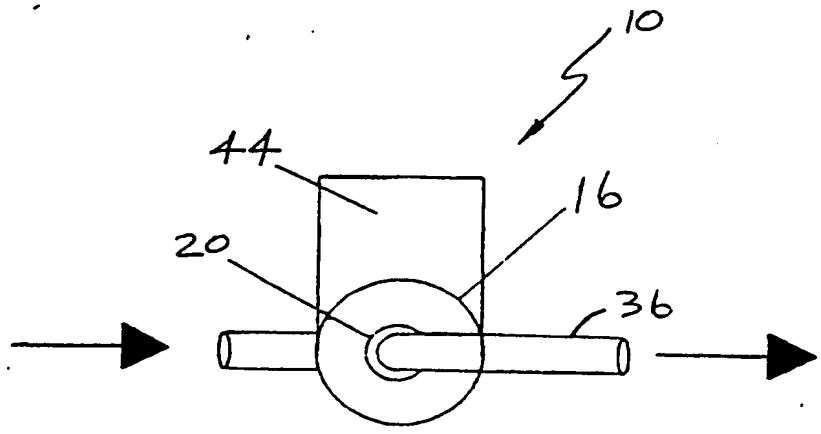

FIG. 3.

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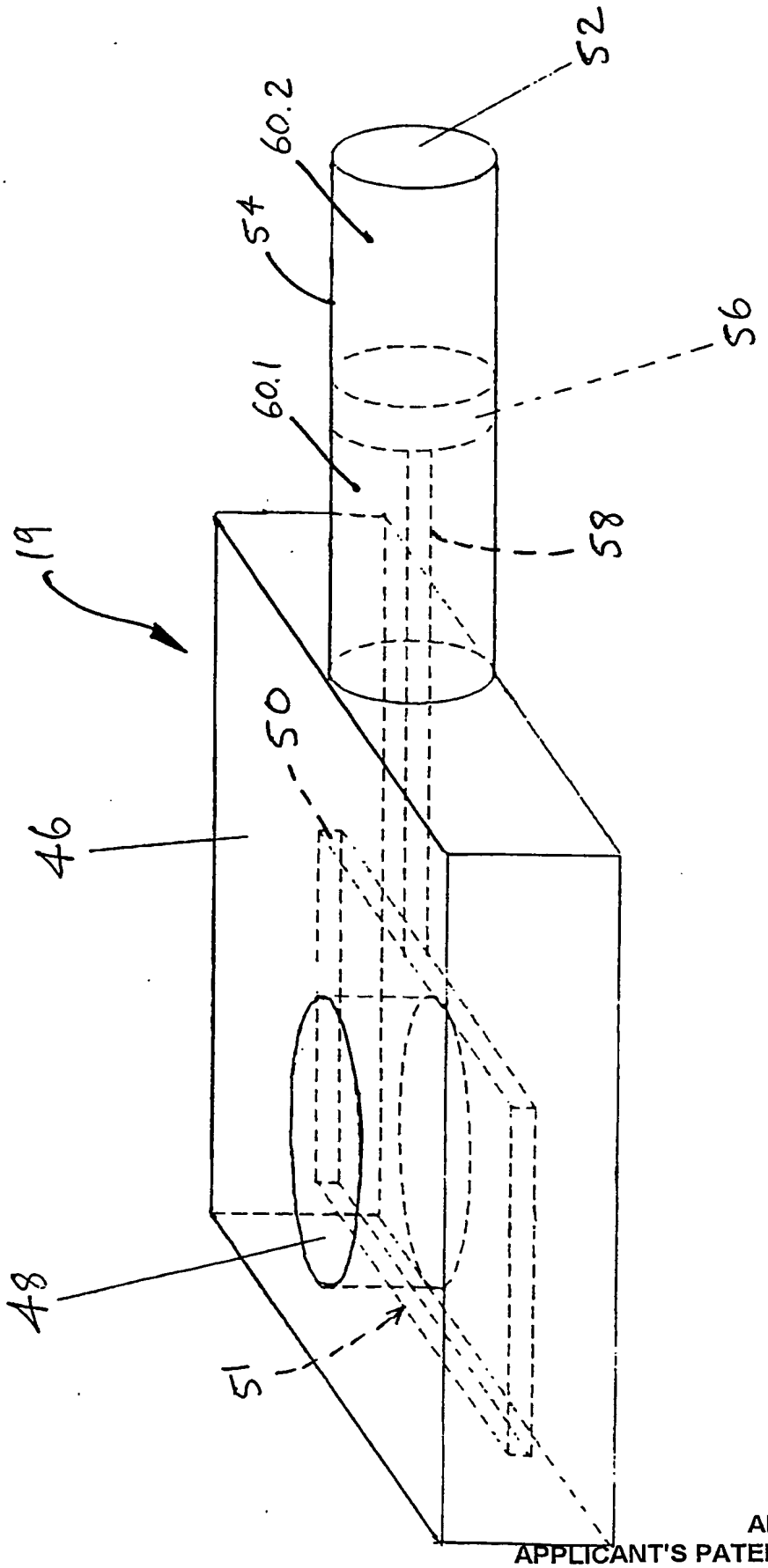

FIG. 4.

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